CLAIMS

1. A heat treatment apparatus comprising:

a reactor for treating substrates; and

a supporting tool for supporting a plurality of the substrates in a plurality of stages in the reactor;

wherein the supporting tool comprises a plurality of supporting plates that come into contact with the plurality of substrates respectively, and a plurality of supporting strips for supporting the plurality of supporting plates in the plurality of stages, and the supporting plates and the supporting strips overlap at least partly in a direction of the thickness.

2. The heat treatment apparatus according to Claim 1, wherein recesses are formed on either one of back surfaces of the supporting plates or upper surfaces of the supporting strips.

3. The heat treatment apparatus according to Claim 1, wherein the recesses are formed on the upper surfaces of the supporting strip that come into contact with the back surfaces of the supporting plates.

4. The heat treatment apparatus according to Claim 1, further comprising a substrate transfer unit for transferring the substrates to the supporting tool, wherein the substrate transfer unit includes tweezers for putting the substrates, and wherein the supporting strips

are formed with recesses on the upper surfaces thereof at least at portions that oppose the tweezers when transferring the substrates.

5. The heat treatment apparatus according to Claim 4, wherein the recesses are provided on the supporting strips at least in a range from the portions that opposes the tweezers when transferring the substrates to ends on a side where the supporting plates are supported.

6. The heat treatment apparatus according to Claim 1, wherein fitting portion for fitting mutually the supporting plate and the supporting strips is provided at least on one of the supporting plates and the supporting strips.

7. The heat treatment apparatus according to Claim 1, wherein the supporting strips are configured to support at least outer peripheral portions of the supporting plates on a substrate insertion side.

8. The heat treatment apparatus according to Claim 1, wherein the supporting strip has a skeleton structure, wherein the supporting plate comprises at least one through hole, the supporting strips are configured so as not to overlap at least one through hole.

9. The heat treatment apparatus according to Claim 8, wherein the supporting plate comprises one through hole at a center thereof, and the supporting strips are

configured to support an outer portion of the through hole.

10. The heat treatment apparatus according to Claim 1, wherein the supporting tool further comprises a plurality of pillars, the supporting strips are formed integrally with the pillars so as to connect the plurality of pillars, and the supporting strips and the pillars are formed of SiC impregnated with Si.

11. A heat treating apparatus comprising:

a reactor for treating substrates; and

a supporting tool for supporting the substrates in the reactor,

wherein the supporting tool includes a supporting plate that comes into contact with the substrate, and a supporting strip for supporting the supporting plate, and wherein a fitting portion for fitting mutually the supporting plates and the supporting strips is provided at least on one of the supporting plate and the supporting strip.

12. A heat treatment apparatus comprising:

a reactor for treating a substrate; and

a supporting tool for supporting the substrates in the reactor,

wherein the supporting tool comprises a supporting plate that comes into contact with the substrate, and a supporting strip for supporting the supporting plate, and

wherein the supporting strip is configured to support at least an outer peripheral portion of the supporting plate on a substrate insertion side.

13. A heat treatment apparatus comprising:

a reactor for treating a substrate; and

a supporting tool for supporting the substrate in the reactor,

wherein the supporting tool includes a supporting plate that comes into contact with the substrate, and a supporting strip for supporting the supporting plate, wherein the supporting strip has a skeleton structure, wherein the supporting plate comprises at least one through hole, and the supporting strips are configured so as not to overlap at least one through hole.

14. A method of manufacturing a substrate comprising a step of:

supporting a plurality of the substrates in a plurality of stages with a supporting tool including a plurality of supporting plates that come into contact with the plurality of substrates respectively, and a plurality of supporting strips for supporting the plurality of supporting plates in the plurality of stages and being configured in such a manner that the supporting plates and the supporting strips overlap at least partly in a direction of thickness,

carrying the plurality of substrates supported by the supporting tool into a reactor,

heat-treating the plurality of substrates supported by the supporting tool in the reactor,

carrying out the plurality of substrates supported by the supporting tool from the reactor after having heat-treated.